

# **MEDIATE SOFTWARE TOOL APPLICABLE TO SERVER FOR ACCESS TO A SQL DATABASE**

## **FIELD OF THE INVENTION**

5 [0001] This invention relates generally to a server for execution of a SQL (structured query language) engine, which is usable for just a limited number of users simultaneously, more particularly, it relates to a mediate software tool applicable to server that allows more people to join the SQL engine for access to a SQL database.

## **BACKGROUND OF THE INVENTION**

10 [0002] If a conventional server that services a limited number of users to access a SQL database has a numerosity of client computers suddenly expanded, the access to the SQL database would be probably jammed and paralyzed immediately. Under such a situation, there seems no other choice but replace the SQL engine  
15 with a renewed version of larger capacity that might entail great expense for endless requirements.

## **SUMMARY OF THE INVENTION**

[0003] The primary object of this invention is to provide a mediate software tool applicable to server so as to expand the available capacity of a SQL engine.

20 [0004] In order to realize abovesaid object, a server for application of the mediate software tool of this invention must be provided with a SQL database and a SQL engine with a limited capacity in access of the SQL database such that the capacity of availability of the SQL engine can be expanded to allow more people to join with. This mediate software tool comprises: an access module for establishing  
25 a plurality of instruction accesses between the server and a plurality of client

computers and for transmitting/receiving the SQL commands and the processing results thereof by taking advantage of the built instruction accesses; and a SQL instruction dispatching/receiving module, which is responsible to dispatch the SQL commands to the SQL engine and receive the processed results from the SQL engine and transmit the same to the access module.

[0005] For more detailed information regarding advantages or features of this invention, at least an example of preferred embodiment will be fully described below with reference to the annexed drawings.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0006] The related drawings in connection with the detailed description of this invention to be made later are described briefly as follows, in which:

Fig. 1 shows the hardware connectivity of a plurality of client computers and a server, where this invention is applied;

Fig. 2 shows the configuration of the main memory in the server shown in Fig. 1;

Fig. 3A shows a processing flowchart of an access module of this invention;

Fig. 3B shows a processing flowchart of a SQL instruction dispatching/receiving module of this invention;

Fig. 4 is a schematic view showing that a narrow access of a SQL engine is broadened after this invention is employed in the server thereof;

Fig. 5 is a picture shown on a server's display, in which a mediate software tool is executed in the server;

Fig. 6 is a picture shown on a client computer, in which the client computer is giving instructions to the access module of the server requesting for

building a SQL instruction access;

Fig. 7A is a picture shown on a client computer representing the response from the server to the instruction of the client computer requesting for building a SQL instruction access;

5 Fig. 7B shows a picture on the server under the situation shown in Fig. 7A;

Fig. 8 is a schematic view showing file transmission performed by an instruction module of the server;

Fig. 9A shows that a client computer is uploading a file to the server; and

10 Fig. 9B is a picture shown on the server under the situation in Fig. 9A.

#### **DETAILED DESCRIPTION OF THE INVENTION**

20 [0007] Fig. 1 shows the hardware connectivity of a plurality of client computers and a server, where this invention is applicable. A net 30 connects a server 10 with a plurality of client computers 20, in which the net 30 could be the Internet or an Intranet, and the server 10 comprises at least a SQL (structured query language) database 10a and a SQL engine 10b, whose user's amount is constrained for access of the SQL database. The SQL engine 10b and a mediate software tool 100 of this invention are to be executed by the server 10.

[0008] Fig. 2 shows the configuration of the main memory in the server shown in Fig. 1. The memory of the server 10 stores at least: a windows O/S of server version 10c; the user's amount constrained SQL engine 10b; and an access module 101 and a SQL instruction dispatching/receiving (d/r) module 103 of the mediate software tool 100, in which the Windows O/S of server version 10c could be the operation system (O/S) of the Windows NT or Windows 2000, and the SQL engine 25 10b is the SQL server software of Microsoft Corporation.

[0009] Fig. 3A shows a processing flowchart of an access module of this invention. A step 101a is to build a plurality of SQL instruction accesses **1010** on the net **30** between the server **10** and the client computers **20**. A step 101b is to receive a SQL instruction **40** included in the SQL instruction accesses **1010** and a step 101c is to transmit the SQL instruction **40** to the SQL instruction d/r module **103**. A step 101d is to receive the processed result **50** of SQL instruction from the SQL instruction d/r module **103** and a step 101e is to transmit the processed result **50** of SQL instruction to the client computers **20** via the SQL instruction accesses **1010**.

[0010] Fig. 3B shows a processing flowchart of the SQL instruction d/r module of this invention. A step 103a is supposed to receive the SQL instruction **40** transmitted from the access module **101**, and a step 103b is to dispatch the SQL instruction **40** to the SQL engine **10b** for processing. Then, a step 103c is to receive the processed result **50** of SQL instruction processed by the SQL engine **10b**, and a step 103d is to transmit the processed result **50** of SQL instruction to the access module **101**.

[0011] Fig. 4 is a schematic view showing that a narrow access of a SQL engine is broadened after this invention is employed in the server thereof. The SQL engine **10b** in Fig. 4 is a SQL engine capable of accommodating four persons only, namely, it can process the SQL instruction **40** of four client computers **20** the maximum. In this typical example shown in Fig. 4, the maximum amount of the SQL instruction access **1010** buildable in the access module **101** is the product of the maximum number of people who is accepted for using simultaneously the SQL engine **10b** by 256, namely,  $4 \times 256 \cong 1000$ . In other words, the access module **101** can link online with 1000 client computers simultaneously for the latter to access

the SQL database **10a**. Also in this figure, the SQL instruction d/r module **103** is supposed to receive a SQL instruction **40** provided by one of the 1000 client computers **20** through the access module **101**, then dispatch that SQL instruction to the SQL engine **10b** for processing. The processed result of the SQL instruction **50** transmitted back to the client computer **20** via the SQL instruction access **1010** of the access module **101**.

[0012] Fig. 5 is a picture **60** shown on the server **10**, in which the mediate software tool **100** of this invention is executed. Fig. 6 is a picture **70** shown on a client computer **20**, which is giving instructions to the access module **101** of the server **10** requesting for building a SQL instruction access **1010**.

[0013] Fig. 7A is a picture **80** shown on a client computer representing the response from the server to the instructions of the client computer that has requested for building a SQL instruction access. In the picture **80**, a SQL instruction **40** of "select \* from employees" is inputted to a block **80a** under SQL Command menu, and the result **50** is shown in a block **80b** after being processed by the server **10**. Fig. 7B shows a picture on the server under the situation shown in Fig. 7A. In a picture **90** shown on the display (not shown) of the server **10**, a block **90a** reveals the related processing status of the SQL instruction **40** of "select \* from employees."

[0014] The mediate software tool of this invention further comprises a file transmission instruction module **105** as illustrated in Fig. 8. A file transmission command **200** from a client computer **20** can be transmitted to the file transmission instruction module **105** through the SQL instruction access **1010** built by the access module **101**. Then, the file transmission instruction module **105** would start to process the data according to the file transmission command **200** so as to effect the

file transmission from the client computer **20** and store the file transmitted in a storing device **10d** of the server **10**.

[0015] Fig. 9A shows that a client computer is uploading a file to the server. In a picture **110** shown in the client computer **20**, a file path is inputted to a block **110a**, then a transmission command is effected in a block **110b**. Fig. 9B is a picture **120** shown on the server under the situation in Fig. 9A. In this picture **120**, a block **120a** reveals the processing status of the file transmission command.

[0016] In the above described, at least one preferred embodiment has been described in detail with reference to the drawings annexed, and it is apparent that numerous variations or modifications may be made without departing from the true spirit and scope thereof, as set forth in the claims below.